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29 September 1954

SUBJECT: TERMS OF REFERENCE: NIE 11-9-54: SOVIET AIR DEFENSE
CAPABILITIES, 1954-1960

THE PROBLEM

To estimate the capabilities of Soviet air defense through
the period 1954-1960.

SCOPE

This estimate is to be largely a revision and updating of SIE-5,
dated 3 December. Contributors are requested to review this estimate and,
where the answers to the questions below remain the same, merely so indicate.
Where new estimates are made, and when feasible, use the base years 1954,
1957, and 1960. Geographically, the scope of this estimate extends to the
entire Soviet Bloc including Asiatic Communist Areas as well as the European
Satellites and strives to ascertain regional as well as overall capabilities.
Operationally, the scope of this study extends to all forms of active air
defense, and passive air defense, including dispersal of population, political
control, military functions and industry.

QUESTIONS BEARING ON THE PROBLEM

Phase ONE: The Present (1954) Status of Soviet Air Defense.

I. SOVIET AIR DEFENSE DOCTRINE

A. What is the present Soviet air defense doctrine?

How have Soviet strategic, operational and tactical
doctrines changed in the post war period, particularly
in reaction to (1) the development and improved
capability of the thermonuclear weapons, (2) enhanced

bomber capability, and (3) the possible advent of ballistic missiles?

II. SOVIET AIR DEFENSE PRIORITIES

- A. What priority has been assigned to air defense since World War II as compared with other military objectives by: (1) the USSR within the USSR, (2) the European Satellites, (3) the Asiatic Communists?
- B. Within each of these areas what has been the regional and local assignment of priorities for air defense? What indications do these past actions offer as to the probable principle on which potential Soviet Bloc targets are assigned defense priorities.
- C. What relative priorities are indicated by (1) historical production rates of air defense system equipment and facilities and (2) by total expenditures on air defense?

III. THE ORGANIZATION AND COMPOSITION OF SOVIET AIR DEFENSE

- A. What are the present channels of responsibility and authority for air defense in the Soviet Union?
- B. What is the organization and composition of military forces devoted primarily to air defense? What other forces could be available for air defense?
- C. What is the organization and composition of civilian and noncivilian groups contributing to Soviet air defense through passive defense activities? What are their functions?

D. What is the relationship of European Satellite and Asiatic

Communist air defense systems to that of the USSR?

Are the systems independent or organizationally and

functionally complementary?

IV. PRESENT SOVIET AIR DEFENSE CAPABILITIES

A. Equipment

1. What are the principal Soviet aircraft types currently

employed for air defense? What are their performance

characteristics and capabilities compared with equiva-

lent US types?

2. What electronics equipment does the Soviet Bloc now

have? What are the capabilities of such equipment

compared to US equipment and what is its estimated

effectiveness in terms of the air defense problems of

the USSR? Discuss above in terms of:

a. Early warning radar

b. Ground control intercept equipment

c. Air intercept equipment

d. Radio navigation equipment

e. Communications nets

f. GCA or equivalent

g. Antiaircraft fire control and searchlight

control radar.

h. Electronic countermeasure equipment

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3. What are Soviet antiaircraft capabilities, including guns, fuses, searchlights, and unguided rockets? How does performance compare with US types? How far will the equipment now available meet the requirements of Soviet air defense?

4. What guided missiles (air-to-air and surface-to-air) does the Soviet Bloc have? What are their performance characteristics? What will be the major deficiencies or problems in their employment?

B. Soviet Air Defense Facilities and Logistical System ✓

1. What is the present status of air defense facilities available to the Soviet Bloc, by Air Defense districts (see Annex A), for defensive operations:

- a. Warning and countermeasures facilities
- b. air facilities
- c. ground based anti-air facilities
- d. passive defense
- e. air defense command and communication net?

C. Soviet Air Defense Military Operational Capabilities ✓

1. What is the estimated level of operational efficiency in the utilization of equipment, weapons and weapons systems, and air facilities discussed in Sections IV, A, and B, e.g., level of training, maintenance skills, operational skills?

2. How adequate is the Soviet logistical system for meeting the requirements of the Soviet air defense system, especially jet fuel requirements, during the period of this estimate?

3. What is the estimated level of communications effectiveness for local filter center operations, and for coordinating regional defense operations?

V. MAJOR STRENGTHS AND WEAKNESSES OF THE SOVIET AIR DEFENSE SYSTEM

A. What are the major strengths and weaknesses and the consequent net capabilities of the present Soviet air defense system.

Phase TWO: Future Soviet Air Defense Requirements and Capabilities

VI. FUTURE AIR DEFENSE REQUIREMENTS

In the light of the probable Soviet estimate of the attack capabilities which might be mounted against it in the future, what additions and improvement will be required by 1957 and 1960 in order for the Soviets to have a net capability at those dates?

VII. SOVIET SCIENTIFIC AND TECHNICAL CAPABILITIES

A. What are the characteristics and the development timing of Soviet aircraft types of air defense significance which are likely to be developed through the period of this estimate?

B. What are the characteristics of the electronic warning, counter-measure and communication equipment of air defense significance which the Soviets are likely to develop at what times during the period of this estimate?

- C. What are the classifications and the timing of Soviet anti-aircraft equipment including guided missiles which the Soviets are likely to develop through the period of this estimate?

VIII. SOVIET ECONOMIC CAPABILITIES FOR PRODUCTION AND SUPPORT OF AIR DEFENSE WEAPONS AND SYSTEMS

- A. What is the estimated annual cost of production, maintenance and operation of equipment, weapons and weapon systems, and air facilities for air defense by year, through the period of this estimate?
- B. What is the capacity production and what is the estimated production by year, through the period of this estimate?
- What are the economic limitations to production of equipment, weapons and weapons systems, air facilities, and essential logistical support items during this period?

IX. ESTIMATED FUTURE CAPABILITIES OF THE SOVIET BLOC AIR DEFENSE SYSTEM

What is likely to be the over-all raw capability of the air defense forces and systems in each of these air defense areas against Western aircraft and under various attack conditions and scales of attack during the period of this estimate? What are the major weaknesses or deficiencies of the air defense system in each area?

What are the net capabilities of the Soviet Air Defense system in 1957 and 1960?

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AIRDEX "A" *

AIR DEFENSE DISTRICTS

1. Northern and Northwest District
Kola, Leningrad, Baltic
2. Central District
Moscow
3. Southwest and South
Kharkov
4. Far East District
Chukotski, Kamchatka, Maritime
5. Caucasus District
6. Siberian District
Urals, Far North, Transbaikai
7. European Satellite
8. Asiatic Communists
China, North Korea

* This is a suggested list subject to modification in accordance with the findings on organization (Section III).

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